

IN THE U.S. DISTRICT COURT FOR MARYLAND
Southern Division

BEYOND SYSTEMS, INC.

Plaintiff

v.

WORLD AVENUE U.S.A., LLC, et al.,

Defendants

*
*
*
*
*
*
*
*
*

Case No. PJM 08 cv 0921

**DECLARATION OF NEAL A. KRAWETZ ON BEYOND SYSTEMS, INC. SUBPOENA
PRODUCTIONS**

I, Neal A. Krawetz, Ph.D, pursuant to 28 U.S.C. §1746 hereby declare under penalty of perjury as follows:

1. I am over 18 years of age and fully competent to testify to the facts set forth in this declaration.
2. I have been asked by World Avenue USA, LLC (WAUSA) to provide an opinion on the production of documents by Beyond Systems, Inc. (BSI) in compliance with the Court's order at the September 23, 2010 hearing. My qualifications are set forth in the resume attached as Exhibit 1. Based on my 16+ years of computer forensics experience, I believe that I am qualified to render an opinion on computer forensics matters pertaining to the production.
3. I have reviewed the BSI subpoena productions submitted by Attorney Stephen Ring on October 14, 2010. The productions are titled "Subpoena Copies MR1.zip" (hereby referred to as Home), "Subpoena Copies MR2.zip" (Work), "Subpoena responses MR 3.zip" (Responses), and "Subpoenas MR4.zip" (ALO).
4. The provided documents do not identify which systems are included in the productions. The only clues come from the provided directory names: "Home" is assumed to refer to Michael

Rothman's home computer, while "Work" is ambiguous and assumed to be either Michael Rothman's or Stephen Ring's office computer. However, "ALO" does not identify whether it is a home or office computer. "ALO" is assumed to refer to a computer used by Amanda L. Ornitz. It is my understanding that Ms. Ornitz is a legal assistant to Mr. Rothman.

5. According to the Court ruling on September 23, 2010, BSI was required to produce copies of all versions of all subpoenas that left their individual law offices, including documents sent between home and office locations, and documents sent to subpoena recipients. My understanding is based on the excerpt of the transcript attached as Exhibit 2.

6. The documents produced by BSI are not all of the documents that the Court required produced. As a preliminary matter, BSI has complicated the production by copying files to additional system(s) – generating even more copies in the process – rather than providing direct copies of the files from the original systems. The creation of new document copies serves to obscure the source of the files. However, I have been able to determine the following:

- (1) BSI did not produce all required Attachment A versions and copies. Specifically, BSI did not provide Microsoft Word documents of two known revisions, did not produce all copies of the combined subpoena form with Attachment A documents, and did not provide documents representing all files transferred between home and office locations. These missing files are known to exist because they are referenced in the produced files' metadata¹.
- (2) Metadata is missing from the Home and Work archives. The missing metadata means that four files have an unknown origin.
- (3) Documents were removed from the Home archive. At least two files are known to be

¹ *Metadata* is "data about data" that is common found inside or associated with specific file formats. Metadata usually includes information about a file's origin.

missing based on the absence of sequential information in the metadata.

- (4) Files were planted on the Home systems. According to the produced metadata, files in the Home archive came from emails that were saved on the home system no more than a few hours before the production to WAUSA. These are not original copies from a home system.
- (5) Files in the Work archive are from on an unidentified system that was not one of the office/work systems. According to the produced metadata, files in the Work archive were saved from email attachments. Moreover, nearly half of the files were placed on the system *after* they were produced to WAUSA in February 2010.
- (6) BSI did not provide copies of the archives that were used to create the Home and Work archives. The provided metadata identifies the existence of archives that contained copies of the subpoenas and that were emailed between systems. The archives, which contain copies of the subpoenas, were not produced.
- (7) Files in the ALO archive came from unidentified sources. Specifically, there are 24 PDF files that lack the metadata that identifies the files' origin.
- (8) The ALO, Home, and Work archives contain backdated documents. Specifically, **there are 69 documents with a date on the signature line that does not match the metadata.** The original copies of the January subpoenas also contain different signatures.
- (9) BSI has not produced all copies of the signature forms and signed documents. This is known because the signature forms and signed documents in the ALO archive are unrelated.
- (10) BSI did not produce files sent between home and work computers, as attested in

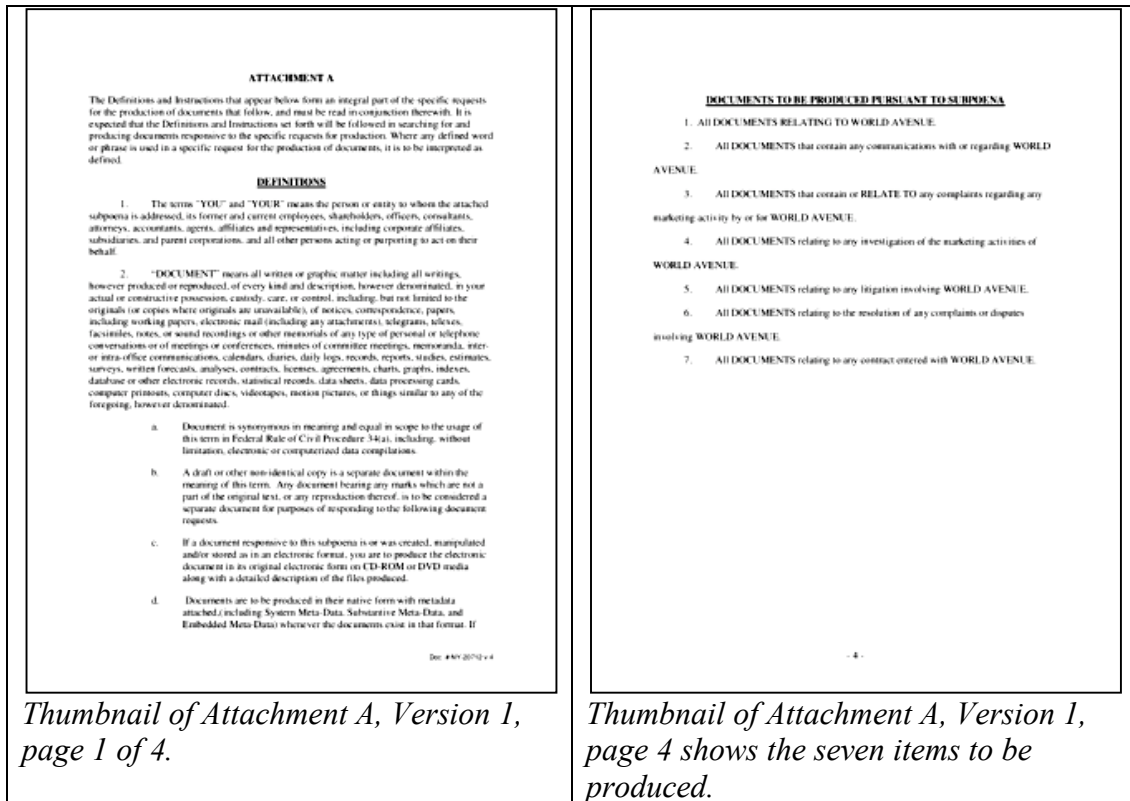
Michael Rothman's affidavit. In his affidavit, he explicitly mentions sending files between his home and office systems between February 5th and 7th, 2010. However, no files have been produced that show changes, modifications, saving, or copying to any system during those dates.

(11) PDF and Word documents are missing for documents sent to third-party subpoena recipients. The Court order required *all* copies of subpoenas that went out of the office. However, BSI has not produced any full copies of the subpoenas sent to third-party recipients in January 2010.

Description of Attachment A Versions Produced

7. There are at least three distinct versions of Attachment A to the produced subpoenas:
- **Version 1:** This four-page PDF² document, last modified on February 2-3, 2010, contains a short version of Attachment A. Page 4 of this document lists seven items to be produced by the subpoena recipient. Based on my review of the subpoena responses, this document was used on subpoenas dated January 7, 2010. However, I have only seen versions returned by third-party subpoena recipients. Moreover, those documents (Document 323-28, Document 323-29, and WAUSA-3rd-Party 02808 – 02821) contain both Attachment A Version 1 and Attachment A Version 2.

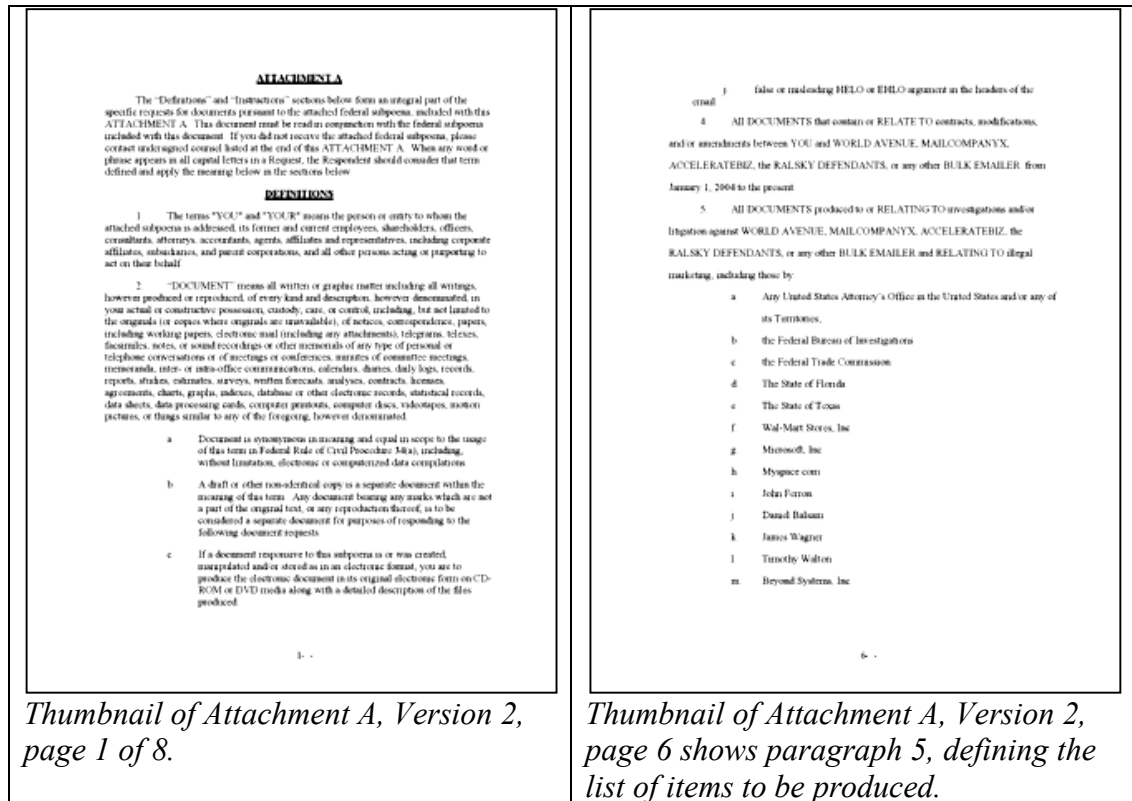
² PDF is the Portable Document Format created by Adobe Systems, Inc. PDF files are a common file format for online documents and reports.



Thumbnail of Attachment A, Version 1, page 1 of 4.

Thumbnail of Attachment A, Version 1, page 4 shows the seven items to be produced.

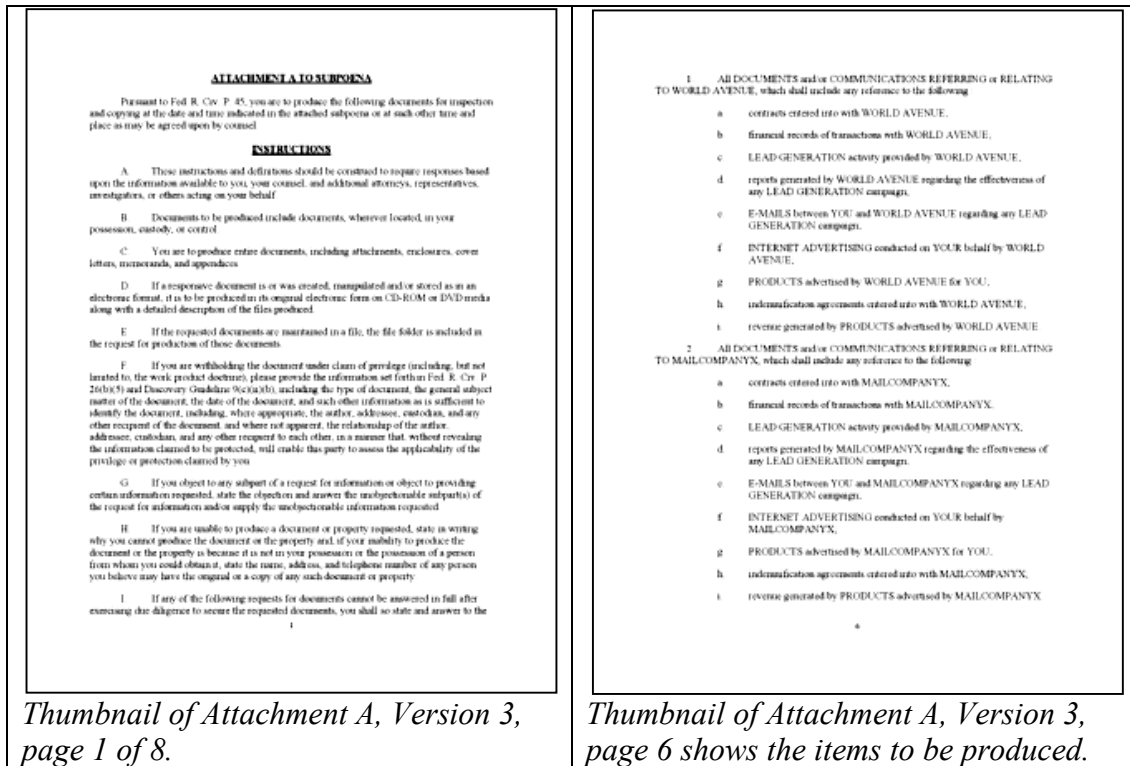
- **Version 2:** This eight-page PDF document is found in documents submitted from third-party recipients, and Model.Attachment.A.MSR.fina.pdf in the Home and Work archives. This version of Attachment A includes a paragraph 5 that requires information related to investigations by the FBI and United States Attorney Offices. This PDF appears to have been created on January 7, 2010 by Michael Rothman. Some copies of Version 2 are found in scanned PDFs from third-party recipients in the Responses archive, and other copies appear in the documents submitted from third-party recipients to WAUSA's legal counsel. This document was served on some of the subpoena recipients.



Thumbnail of Attachment A, Version 2, page 1 of 8.

Thumbnail of Attachment A, Version 2, page 6 shows paragraph 5, defining the list of items to be produced.

- **Version 3:** BSI produced 23 identical, eight-page Microsoft Word versions of Attachment A in the ALO archive (assumed to be a system attributed to Amanda L. Ornitz). This document was also used in the "COMBINED SERVED SUBP FILE.zip" archive produced to WAUSA's legal counsel on February 8, 2010, and in PDF files provided in the Home and Word archives. This version does not appear to have been sent to any third-party recipients.



Thumbnail of Attachment A, Version 3, page 1 of 8.

Thumbnail of Attachment A, Version 3, page 6 shows the items to be produced.

Of the Microsoft Word documents of Version 3, BSI did not produce different files.

Instead, BSI produced 36 files with different names but the exact same contents.

Specifically, all 36 Word documents (Version 3) are exact copies of the same file.

The only differences are the file names. For example, the contents found in

“Subpoena Copies from ALO Computer/23 Subpoenas/AccountNow/Schedule.A

.Sponsors.Subpoena.MR.Final” is the exact same as the contents found in

“Subpoena Copies from ALO Computer/Kraft Foods/Schedule.A.Sponsors.

Subpoena.MR.Final copy 12”. The document comparison was performed using

both a SHA1 hash³ and byte-by-byte comparison.

³ SHA1 is the United States Secure Hash Algorithm version 1, as defined in RFC 3174. This algorithm is used to summarize a file into a pseudo-unique 160-bit fingerprint. All things being equal, there is roughly a 1 in 10⁴⁸ chance of two different files generating the same SHA1 hash value (a hash collision). In more realistic terms, if a database holds 10¹⁸ (a million million million) different records, then there is about a 1 in 0.0000000000003 chance of a hash collision between any two records. In general, if two files have different SHA1 values, then they are different files. In this case, all 23 files have the *same* SHA1 hash value; they contain the same contents.

Understanding the produced metadata

8. The findings in this report are dependent on the metadata included in the produced ZIP⁴ archives. *Metadata* is additional information beyond a file's visible contents. Metadata frequently includes creation dates, modification dates, lists of authors, file sources, and additional information about the origins of a file.

9. Metadata may appear in many different places. For example, PDF and Word documents contain metadata about a document's authorship. A ZIP file contains metadata about the file system that held the documents. And some file systems, such as the Apple Macintosh (Mac OS X) maintain metadata about a document's origins.

10. Each of the ZIP archives provided by BSI includes “__MACOSX/” directories. These directories contain metadata and extended attributes⁵ from the Mac OS X operating system.⁶ The attachments are named based on the source file. For example, “__MACOSX/Subpoena Copies from Home Computer/._Account.Now.pdf” contains the metadata associated with “Subpoena Copies from Home Computer/Account.Now.pdf”.

11. Each file under the “__MACOSX/” directories contains Apple metadata and extended attributes. This data identifies whether the file was create/modified on the local system, downloaded from a remote web site, or saved from an email attachment. Specific Apple metadata and extended attributes are discussed in the following findings.

Finding 1: BSI did not produce all required Attachment A versions and copies

12. The provided files include multiple copies of the subpoenas. However, BSI did not

⁴ A ZIP file is an archive that contains files. The contents of a ZIP file are usually compressed, which can make transferring files between computers more convenient.

⁵ *Extended attributes* are a type of optional metadata.

⁶ The Apple metadata is in a file format called AppleDouble. This format is detailed in RFC 1740 as well as technical developer manuals available from Apple, Inc.

produce all of the subpoena information ordered by the Court on September 23, 2010. The files that were not produced were the Microsoft Word documents used to create Attachment A Versions 1 and Version 2, and the revisions sent between authors named “Daphne”, “Michael Rothman”, and the ALO system. This was determined by viewing the metadata found inside the PDF for Version 1 and Version 2, and the PDF and Word documents provided for Version 3.

13. Despite an obligation to produce electronically stored information, BSI did not produce a Microsoft Word document of Version 1, which appears to be a revision of the document that was not sent to third-party subpoena recipients. Version 1 appears in the ALO archive and in PDFs that have been combined with subpoena signature forms. The combined PDFs are dated February 2-3, 2010.

14. The documents containing Version 1 are found in the Home, Work, and ALO archives. They each contain PDF metadata. For example, “Subpoena Copies from ALO Computer/23 Subpoenas/AOL/SubpoenaAOL.pdf” contains the following metadata:

- The two-page signature sheet (PDF form) has metadata date of “January 15, 2010 9:30 am” that does not appear in the printed document.
- The Attachment A Version 1 has a creation date of “2009-12-29T12:40:09-05:00” (December 29, 2009 at 12:40:09 pm EST).⁷ The data identifies the author as “Daphne”. The original document title was “Microsoft Word - Attachment A for BBB and Wal-Mart.doc”.
- Attachment A Version 1 has multiple modification dates, indicating multiple revisions, including “2010-01-04T16:09:59-05:00” (January 4, 2010 at 4:09:59 pm

⁷ Different metadata fields record time in different formats. The time zone may or may not be provided. UTC denotes Coordinated Universal Time, also denoted with “Z”. EST denotes Eastern Standard Time zone, which is five hours ahead of UTC (written -05:00 or -0500). EDT is Eastern Daylight Time, which is -0400. Computer times are provided in 24-hour format, with dates are usually recorded as Year-Month-Day.

EST), “2010-01-05T12:30:29-05:00” (January 5, 2010 at 12:30:29 pm EST),

“2010-01-08T10:58:46-05:00” (January 8, 2010 at 10:58:46 am EST), and “2010-

02-03T10:10:48-05:00” (February 3, 2010 at 10:10:48 am EST).

- The combined signature page and Version 1 attachment was created using Adobe Acrobat 6.0 on “20100105123029-0500” (January 5, 2010 at 12:30:29 EST).

15. Although the metadata states that Version 1 originated from a Microsoft Word document created by “Daphne” and had multiple revisions, there is no indication of *who* revised the document, *where* the revisions were performed, or *how* it was attached to the signature pages.

16. The Version 1 PDF documents in the Home, Work, and ALO archives appear to be unprinted and unscanned PDF forms. However, the documents are different. For example, SubpoenaAOL.pdf in Home is the same as SubpoenaAOL copy.pdf in Work, but different from SubpoenaAOL.pdf in ALO. The Home and Work PDF files contain multiple revisions and were last modified on January 8, 2010. In contrast, the ALO version shows the same initial revisions plus an additional modification on February 3, 2010. The differences appear to only be in the two-page signature page and not in the Attachment A (Version 1).

Issued by the UNITED STATES DISTRICT COURT	
<p>Beyond Systems, Inc. Plaintiff</p> <p>World Avenue U.S.A., LLC, et al., Defendants</p> <p>America Online, Inc. 770 Broadway NY NY 10003 c/o Corporation Service Company, Registered Agent 2711 Centerville Rd, Suite 400 Wilmington DE 19808</p> <p><input type="checkbox"/> YOU ARE COMMANDED to appear in the United States District court at the place, date, and time specified below to testify in the above case</p> <p>PLACE OF TESTIMONY: _____ DATE AND TIME: _____</p> <p><input type="checkbox"/> YOU ARE COMMANDED to appear at the place, date, and time specified below to testify at the taking of a deposition in the above case</p> <p>PLACE OF DEPOSITION: _____ DATE AND TIME: _____</p> <p><input type="checkbox"/> YOU ARE COMMANDED to produce and permit inspection and copying of the following documents or objects at the place, date, and time specified below (list documents or objects): See Attachment A</p> <p>PLACE: MICROSOFT WORD 2003 FILED FOR DEPOSITION OF: 201001080004539Z0000 DATE AND TIME: 2/19/2010</p> <p><input type="checkbox"/> YOU ARE COMMANDED to permit inspection of the following premises at the date and time specified below</p> <p>PREMISES: _____ DATE AND TIME: _____</p> <p>Any copy of this order that is subpoenaed for the taking of a deposition shall designate one or more officers, clerks, or other persons who consent to testify on its behalf, and may set forth, for each person designated, the matters on which he or she is to testify. Federal Rules of Civil Procedure, 36B(3)(c)</p> <p>DEPOSITED WITH: _____ ALL DEPOSITS ARE APPROVED FOR FILING BY: _____ DATE: 1/8/2010</p> <p>DEPOSITED WITH: (NAME, ADDRESS AND PHONE NUMBER) Michael S. Rothman 401 East Jefferson St. Suite 201 Rockville MD 20850 (301) 251-9660</p> <p style="font-size: small;">(Use Rule 41.1 Filing Form of Civil Procedure, Parts C & D to add page)</p> <p style="font-size: x-small;">*If return or production is not made within the date of service, more direct order can be made</p>	<p>Beyond Systems, Inc. Plaintiff</p> <p>World Avenue U.S.A., LLC, et al., Defendants</p> <p>America Online, Inc. 770 Broadway NY NY 10003 c/o Corporation Service Company, Registered Agent 2711 Centerville Rd, Suite 400 Wilmington DE 19808</p> <p><input checked="" type="checkbox"/> YOU ARE COMMANDED to appear in the United States District court at the place, date, and time specified below to testify in the above case</p> <p>PLACE OF TESTIMONY: _____ DATE AND TIME: _____</p> <p><input type="checkbox"/> YOU ARE COMMANDED to appear at the place, date, and time specified below to testify at the taking of a deposition in the above case</p> <p>PLACE OF DEPOSITION: _____ DATE AND TIME: _____</p> <p><input type="checkbox"/> YOU ARE COMMANDED to produce and permit inspection and copying of the following documents or objects at the place, date, and time specified below (list documents or objects): See Attachment A</p> <p>PLACE: MICROSOFT WORD 2003 FILED FOR DEPOSITION OF: 201001080004539Z0000 DATE AND TIME: 2/19/2010</p> <p><input checked="" type="checkbox"/> YOU ARE COMMANDED to permit inspection of the following premises at the date and time specified below</p> <p>PREMISES: _____ DATE AND TIME: _____</p> <p>Any copy of this order that is subpoenaed for the taking of a deposition shall designate one or more officers, clerks, or other persons who consent to testify on its behalf, and may set forth, for each person designated, the matters on which he or she is to testify. Federal Rules of Civil Procedure, 36B(3)(c)</p> <p>DEPOSITED WITH: _____ ALL DEPOSITS ARE APPROVED FOR FILING BY: _____ DATE: 1/8/2010</p> <p>DEPOSITED WITH: (NAME, ADDRESS AND PHONE NUMBER) Michael S. Rothman 401 East Jefferson St. Suite 201 Rockville MD 20850 (301) 251-9660</p> <p style="font-size: small;">(Use Rule 41.1 Filing Form of Civil Procedure, Parts C & D to add page)</p> <p style="font-size: x-small;">*If return or production is not made within the date of service, more direct order can be made</p>

*Page 1 of SubpoenaAOL.pdf from the **Home** archive, last modified on **January 8, 2010**, as seen using Apple Preview. The third "Commanded" order has a large, black circle, indicating that it is not checked.*

*Page 1 of SubpoenaAOL.pdf from the **ALO** archive, last modified on **February 3, 2010**, as seen using Apple Preview. The third "Commanded" order has a checkmark.*

17. Because Attachment A Version 1 appears in the Home, Work, and ALO archives but with different modification dates on the combined signature and Attachment A documents, there must be a version of Attachment A Version 1 as a Word document and without the two-page signature sheet that was passed between the different computer systems. BSI did not provide this missing document.

18. Similarly, BSI did not produce a Microsoft Word document of Version 2, which is the operative version that left the office. Instead, BSI only produced a single PDF of Version 2 in the Home and Work archives. Each PDF file includes metadata. For example, "Subpoena copies from Home Computer/Model.Attachment.A.MSR.fina.pdf" contains the following metadata:

- Attachment A Version 2 was created on "20100108004539Z0000" (January 8, 2010)

at 00:45:39 UTC, which is January 7, 2010 at 7:45:49 pm EST).

- The author of the document is identified as “Michael Rothman” and the PDF’s title is “Model.Attachment.A.MSR.draft”.
- The document was created using Microsoft Word.

19. Because “Daphne” authored Version 1 and “Michael Rothman” authored Version 2, there should be a version of the Daphne document that was transmitted to Michael Rothman prior to his edits. BSI did not produce this document(s).

20. BSI only produced Microsoft Word documents for Version 3 of Attachment A, which was not the operative version that was sent to subpoena recipients. However, Version 3 appears in both the Home and Work archives within PDF documents. For example, “Subpoena Copies from ALO Computer/23 Subpoenas/AOL/Schedule.A.Sponsors.Subpoena.MR.Final copy 2” is a Microsoft Word document in the ALO archive. This Word document does not include the two-page signature sheet. In contrast, “Subpoena Copies from Home Computer/AOL.pdf” and “Subpoena Copies from Work Computer/AOL.pdf” are PDF documents that contain a scan of the signed signature sheet along with Attachment A Version 3. Therefore, there must either be:

- (1) A copy of the Version 3 PDF on the home and office systems from before it was combined with the signature sheet,
- (2) Both the separate and combined versions found on the ALO system, or
- (3) An unidentified system with both parts and the combined documents.

21. The open question is where the combination of the signature page and Attachment A occurred. In each of these cases, BSI has not provided files that represent the situation. Files were not produced in accordance with the Court’s order.

22. The metadata in the missing document versions (both Word and PDF) should identify (1) when the document was created, (2) when it was last modified, (3) who created and modified the

document, and (4) potentially a list of changes made to the document.

23. Thus, BSI did not produce the Microsoft Word documents, did not produce all copies of the combined two-page subpoena form with Attachment A documents, and did not provide documents representing files transferred between Home, Work, ALO, and between Michael Rothman and the unidentified “Daphne”. The absence of the Microsoft Word document is significant because it would identify authors, modifications, and dates.

Finding 2: Missing metadata in Home and Work archives

24. Many files in the Home and Work archives contain Apple metadata that identifies where the files came from. However, a few files in each archive are missing the associated metadata. This indicates that specific files in the Home and Work archives were handled differently and may indicate metadata modifications or tampering. The specific files missing metadata are:

- (1) `Model.Attachment.A.MSR.fina.pdf` in both the Home and Work archives. This document is significant because it is the only copy of Attachment A Version 2 provided by BSI, even though this is the version that was sent to third-party subpoena recipients.
- (2) `SubpoenaStyleMyHouse.pdf`, `Citibank.MC.pdf`, and `Vonage.pdf` in the Home archive. Although identical content copies exist in both the Home and Work archives, these three files are different because they lack Apple metadata that is found with all other files, including the identical content copies from the Work archive.

25. These files were determined to be different because they lack Apple metadata. Specifically, all other files in the Home and Work archives have associated Apple metadata that identifies the origin for the files. In contrast, these four specific files do not have any Apple metadata.

26. As previously mentioned, the “__MACOSX” directory stores Apple metadata and extended attributes for files. The Home archive contains 43 files: 42 PDF files and one “.DS_store” file.⁸ The 42 PDF files are subpoena documents. However, while the Home archive’s “Subpoena Copies from Home Computer/” directory contains 43 files, the associated “__MACOSX” directory only contains 39 files. The `Model.Attachment.A.MSR.fina.pdf`, `Citibank.MC.pdf`, `Vonage.pdf`, and `SubpoenaStyleMyHouse.pdf` in the Home archive do not have associated metadata.

27. If all of the files were handled the same way or transferred from the same source, then they would either all have Apple metadata or none would have Apple metadata. The fact that four files lack Apple metadata, while all other files have the same type of Apple metadata, indicates that these four files either (1) came from unidentified systems, (2) had their metadata removed prior to production, or (3) were replaced or modified prior to production.

28. `Model.Attachment.A.MSR.fina.pdf` is the same file (same SHA1 hash and byte-by-byte identical) on both the Home and Work systems. The metadata inside the PDF identifies the creator application for `Model.Attachment.A.MSR.fina.pdf` being Microsoft Word on a Macintosh running Mac OS X version 10.5.8. If this file were created on the Home or Work system by this application, then it would have Apple metadata. If this file was transferred to this system from another computer, then the Apple metadata could be stripped off the file. Since the metadata is missing, this file was not created on this system. BSI did not produce the original copy of this file and has not identified the origin of this file, even though it exists in both the Home and Work archives.

29. The metadata inside `Citibank.MC.pdf`, and `Vonage.pdf` says the files were created

⁸ The “.DS_store” file is a hidden system file created by the Mac OS X operating system for storing custom folder attributes. It appears in all directories accessed by the Mac OS X operating system.

using ScanSnap Manager on an Macintosh running Mac OS X 10.5.8. These documents appear to be the same type of subpoena found in `Account.Now.pdf`, `Blockbuster.pdf`, and the 21 other similar PDF files that were created using ScanSnap Manager. The creation times for all 23 of these PDFs is dated February 8, 2010 with times between 7:07 pm EST and 7:42 pm EST. Since all of the other files have Apple metadata, `Citibank.MC.pdf`, and `Vonage.pdf` should also have Apple metadata. The absence indicates that the files either (1) came from unidentified systems, (2) had their metadata removed prior to production, or (3) were replaced or modified prior to production. In any case, BSI did not produce the original copy of these two files.

30. The Apple metadata in `SubpoenaStyleMyHouse.pdf` identifies the author as “Daphne” and that it was created on a Microsoft Windows system running Microsoft Word and Acrobat Distiller 6.0. The other 17 similar subpoena documents, including `SubpoenaAccountNow.pdf` and `SubpoenaBlockbuster.pdf`, that also identify the same author and creation system.

However, the other 16 files have Apple metadata that was created when the files were transferred to the system. Only `SubpoenaStyleMyHouse.pdf` is missing the Apple metadata. Thus, this PDF either (1) came from unidentified systems, (2) had it’s metadata removed prior to production, or (3) was replaced or modified prior to production.

31. Excluding the Apple metadata, all of the files in the Home archive are also found in the Work archive. However, the Work archive’s `Citibank.MC.pdf`, `Vonage.pdf`, and `SubpoenaStyleMyHouse copy.pdf`, (the same file as `SubpoenaStyleMyHouse.pdf` in the Home archive) each has Apple metadata. Thus, the same files (same SHA1 values) in the Word archive were all handled the same way, while these files in the Home archive either came from an unidentified system or were replaced, updated, or otherwise modified such that the Apple metadata was removed.

32. Thus, I conclude that specific files were replaced, modified, or otherwise handled such that the Apple metadata was removed, and the origins of these files cannot be determined. If all of the files were created on the same system or transferred between systems the same way, then they would all have the same type of Apple metadata. I conclude that four files in the Home archive, and one file in the Work archive, were handled significantly differently from the other files in the produced archives because they lack Apple metadata. The fact that one of these documents is `Model.Attachment.A.MSR.fina.pdf` is significant because this is the only copy of Attachment A Version 2 provided by BSI, even though this is the version that was sent to third-party subpoena recipients.

Finding 3: Documents were removed from the Home archive

33. There are documents identified by the Home archive that are responsive to the Court order are missing. The files are identified as missing because specific computer identifiers are missing. The files are identified as missing based on information in the provided metadata.

34. The provided Apple metadata identifies a sequence of unique enumerated file identifiers, similar to Bates numbers. However, some of those identifiers are missing. The missing file identifiers suggest that files are absent from the Home archive – they were deleted, replaced, modified, or otherwise had the Apple metadata removed prior to production.

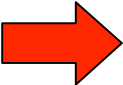
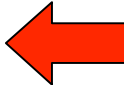
35. To understand why these file identifiers are missing, it is necessary to understand where the identifiers are stored and how they were allocated.

36. Every file on the operating system is assigned a unique index number (inode). The inode identifier does not change when a file is renamed or moved within the file system. A new inode is only assigned when a file is created or copied (creating a duplicate). The inode values are

numerical and sequential.⁹ If five attachments are copied from an email to the desktop, then each attachment will be assigned a sequential inode value.

37. The __MACOSX/ extended attributes include the inode value for the file on the system that created the ZIP archive. The provided inode extended attributes show that some inode values are missing. The specific inode values and file names are as follows:

Files in the Home archive that were downloaded by BSI on 2010-10-14 21:55:38 UTC and have file system timestamps of February 8, 2010:

	87197488 Account.Now.pdf	
	87197489 AOL.pdf	
	87197490 Blockbuster.pdf	
	87197491 BMG.pdf	
	87197492 Body.Sculpture.pdf	
	MISSING: 87197493	
	87197494 Columbia.House.CTC.pdf	
	87197495 Columbia.House.PA.pdf	
	87197496 Direct.Brands.pdf	
	87197497 Direct.TV.pdf	
	87197498 Discover.FS.CTI.pdf	
	87197499 Discover.FS.Owner.pdf	
	87197500 Dish.Network.pdf	
	87197501 Experian.pdf	
	87197502 Intersections.pdf	
	87197503 Kraft.Global.Tassimo.Direct.pdf	
	87197504 Kraft.pdf	
	87197505 Match.com.pdf	
	87197506 Netflix.pdf	
	87197507 Rhapsody.pdf	
	87197508 Star.Club.Rewards.pdf	
	87197509 Style.My.House.pdf	

Files in the Home archive that were downloaded by BSI on 2010-10-14 21:55:51 UTC and have file system timestamps of January 8, 2010:

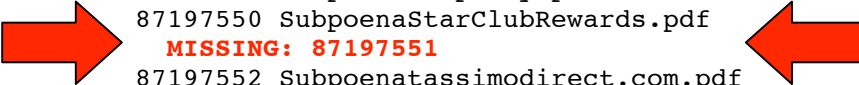
```

87197536 SubpoenaAccountNow.pdf
87197537 SubpoenaAOL.pdf
87197538 SubpoenaBlockbuster.pdf
87197539 SubpoenaBMGMusic.pdf
87197540 Subpoenabodysculpture.pdf
87197541 SubpoenaCitibankMC.pdf
87197542 SubpoenaColumbiaHouse.pdf
87197543 SubpoenaColumbiaHouse2.pdf
87197544 SubpoenaDirectBrands.pdf
87197545 SubpoenaIntersections.pdf

```

⁹ If the system has multiple applications running and creating files at the same time, then inode values will be interlaced. However, the Mac user interface is generally not used for simultaneously creating multiple files at the same time. Instead, users usually switch between open applications and use them sequentially.

87197546 SubpoenaKraftFoods.pdf
87197547 SubpoenaMatch.pdf
87197548 SubpoenaNetflix.pdf
87197549 SubpoenaRhapsody.pdf
87197550 SubpoenaStarClubRewards.pdf
MISSING: 87197551
87197552 Subpoenatassimodirect.com.pdf
87197553 SubpoenaVonage.pdf



38. Each set of files has the same download date, indicating that all files within each set was created at virtually the same time. Since the files were all created at the same time and assigned sequential inode values, the deleted entries are very likely intentional.

39. As shown by the above example, there are two missing inode values. The first missing inode (87197493) should be associated with a filename that is alphabetically between “Body.Sculpture.pdf” and “Columbia.House.CTC.pdf”. The second missing inode (87197551) should be between “SubpoenaStarClubRewards.pdf” and “Subpoenatassimodirect.com.pdf”. The Citibank.MC.pdf and SubpoenaStyleMyHouse.pdf files that were identified as being replaced, modified, or originating from an unidentified source (see Finding 2) *do* match the missing alphabetical listings. These two files were likely placed on the system and then were updated, replaced, or revised – resulting in the removal of the Apple metadata – prior to archiving for production.

40. The third file that was handled differently is vonage.pdf. Since it is alphabetically at the end of the list, it was likely originally assigned to inode 87197510, but updated, modified, or replaced similar to the Citibank.MC.pdf and SubpoenaStyleMyHouse.pdf files. In contrast, the byte-per-byte identical copies of the same files in the Work archive have sequential inode sequences, supporting Finding 2, that these three Home files were handled differently from the other files in the Home archive.

41. The final file that lacks Macintosh metadata is Model.Attachment.A.MSR.fina.pdf.

This file is clearly different from the other three because (1) there is no missing inode where the filename fits alphabetically, (2) the file system timestamp says January 7, 2010 instead of January 8, 2010 or February 7, 2010, and (3) it only contains Attachment A Version 2 and not a copy of the two-page signature sheet. It is unclear where this file originated. In any event, it clearly came from an unidentified source.

42. There may also be missing files before and/or after the list of inodes; only the values in the middle of the sequence can be conclusively identified as missing, deleted, replaced, or updated. For example, there were 27 files created on the file system within the 13-second window between these two sets of email attachments (denoted by the observed inode sequences). Since the user who created the ZIP archive was processing files for this archive, it is reasonable to assume that there were additional files (as many as 27) from a set of email attachments that were not included in the production.¹⁰

43. Therefore, I conclude that at least two files that were placed on the system represented by the Home archive on October 14, 2010 were deleted, replaced, updated, or modified – causing the removal of the associated Apple metadata – prior to being placed into the Home archive and provided to WAUSA's legal counsel.

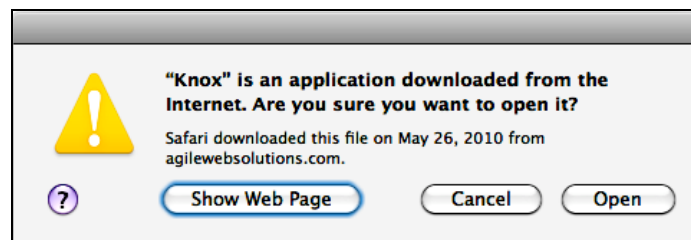
Finding 4: Files were planted on the Home system

44. It is my understanding that the Home archive is supposed to represent files from a home system. However, the home system has not been identified and the provided archives shows that all files with Apple metadata in the Home archive were placed on the system that created the ZIP

¹⁰ If a ZIP archive is emailed and then saved to a system, it will consume one inode value for the saved attachment. If the ZIP archive contains 23 subpoenas and is unpacked into a directory (creating a `._DS_Store` file at the same time), then that denotes an additional 25 inode values for a total of 26 inodes. Accordingly, if we assume that `vonage.pdf` was originally assigned one inode value before being replaced (removing its Apple metadata), then the metadata suggests that entire set of 27 missing inodes likely represents an additional set of 23 subpoenas that were not produced by BSI. Since, at this time, the 27 inodes reference unidentified content, I am placing this finding in a footnote because it is supposition and not a finding of fact.

archive a few hours before being produced to WAUSA's legal counsel. The metadata shows that the files were saved from email attachments on October 14, 2010 at 5:55:38 pm and 5:55:51 pm EST. The files are either not from the home system, or were placed on the home system hours before the October 14th document production.

45. Each Apple metadata file in the Home archive contains a `com.apple.quarantine` extended attribute. This extended attribute is created when a file is acquired from an untrusted, external source.¹¹ For example, if a file is downloaded using the Firefox web browser, then the downloaded file will have a `com.apple.quarantine` metadata record. If the file is an application and the user attempts to run it, then this extended attribute will cause the desktop to prompt the user about running an unsafe application. The warning pop-up message includes the source application and download date. The pop-up alerts look similar to:



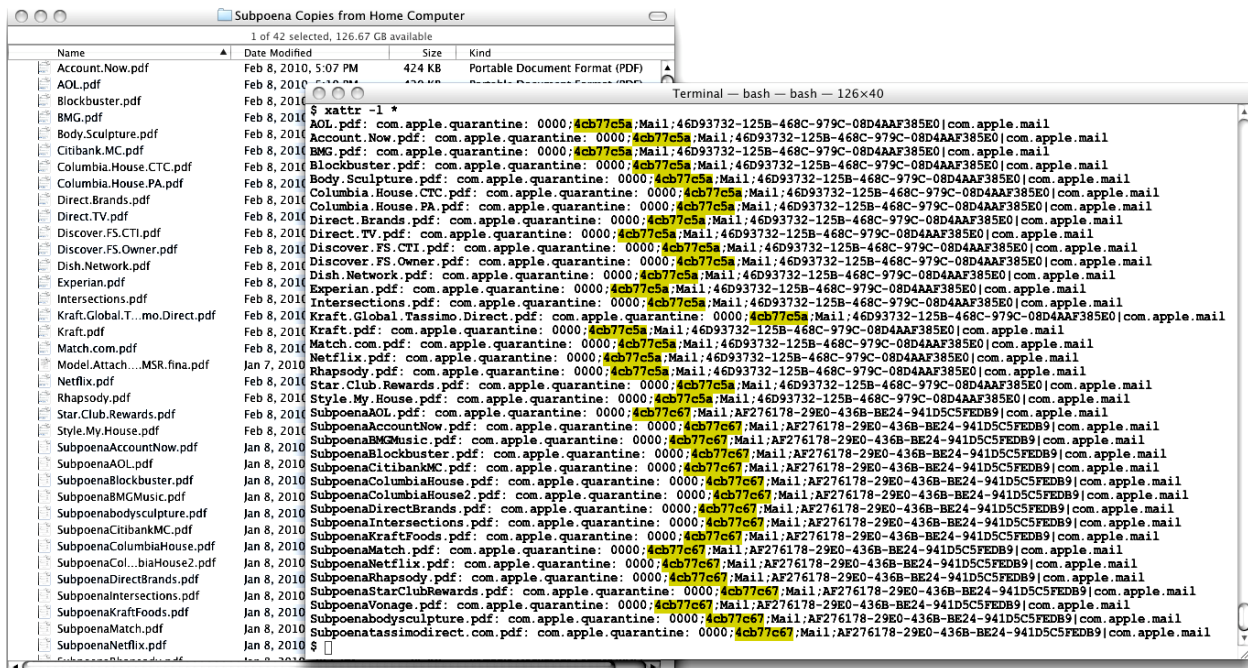
46. Each of the Home archive PDF files with Apple metadata contains a `com.apple.quarantine` record. In each instance, the metadata extended attributes identify that the PDF files came from email attachments that were copied to the file system. For example, the metadata for `BMG.pdf` says:

```
com.apple.quarantine:
  q/0000;4cb77c5a;Mail;46D93732-125B-468C-979C-08D4AAF385E0|com.apple.mail
```

47. The value of the metadata identifies the application (`Mail`), application tracking data

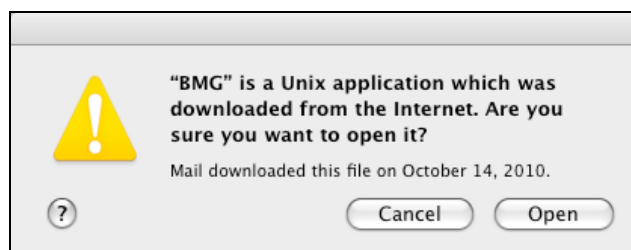
¹¹ Not all Apple applications create `com.apple.quarantine` records. However, the Safari web browser, Firefox web browser, Apple Mail, Apple iChat, and the desktop Finder are all “quarantine aware” applications. Microsoft Word for the Macintosh is partially quarantine aware – it may prompt when a file is opened, and always removes the `com.apple.quarantine` records whenever a document is opened, even if no changes are made.

(46D93732-125B-468C-979C-08D4AAF385E0|com.apple.mail), and the date when the record was created and when the file was saved to the computer. This date is encoded as a hexadecimal number. In this example, 4cb77c5a translates as 2010-10-14 21:55:38 UTC, or October 14, 2010 at 5:55:38 pm EDT.



Screen capture shows the files from the home computer and the com.apple.quarantine values as extracted using the command-line 'xattr -l' application. The hexadecimal values 4cb77c5a and 4cb77c67, highlighted on each line, translate as October 14, 2010 at 5:55:38 pm and 5:55:51 pm EDT.

48. Running any of the PDF files in the Home archive as if it were an application generates a pop-up warning window. For example, BMG.pdf generates the following pop-up window:



49. The com.apple.quarantine tracking data shows that the files in the Home directory came from two separate emails with attachments. The first set of attachments was copied to the

“Subpoena Copies from Home Computer” directory on October 14, 2010 at 5:55:38 pm EDT.

The files are:

Account.Now.pdf	Dish.Network.pdf
AOL.pdf	Experian.pdf
Blockbuster.pdf	Intersections.pdf
BMG.pdf	Kraft.Global.Tassimo.Direct.pdf
Body.Sculpture.pdf	Kraft.pdf
Columbia.House.CTC.pdf	Match.com.pdf
Columbia.House.PA.pdf	Netflix.pdf
Direct.Brands.pdf	Rhapsody.pdf
Direct.TV.pdf	Star.Club.Rewards.pdf
Discover.FS.CTI.pdf	Style.My.House.pdf
Discover.FS.Owner.pdf	

50. The second set of attachments were copied 13 seconds later, at 5:55:51 pm EDT:

SubpoenaAccountNow.pdf	SubpoenaIntersections.pdf
SubpoenaAOL.pdf	SubpoenaKraftFoods.pdf
SubpoenaBlockbuster.pdf	SubpoenaMatch.pdf
SubpoenaBMGMusic.pdf	SubpoenaNetflix.pdf
Subpoenabodysculpture.pdf	SubpoenaRhapsody.pdf
SubpoenaCitibankMC.pdf	SubpoenaStarClubRewards.pdf
SubpoenaColumbiaHouse2.pdf	Subpoenatassimodirect.com.pdf
SubpoenaColumbiaHouse.pdf	SubpoenaVonage.pdf
SubpoenaDirectBrands.pdf	

51. As identified in Finding 2, not all of the files have Apple metadata. If all of the files came from the same source and were managed the same way, then they should all have the same metadata. However, this is not the case. Citibank.MC.pdf, SubpoenaStyleMyHouse.pdf, Vonage.pdf, and Model.Attachment.A.MSR.fina.pdf all lack metadata files in the Home __MACOSX directory. It is unclear whether these files were replaced or simply handled differently.

52. The com.apple.quarantine extended attribute identifies when the file was downloaded to the computer system. In this case, it identifies the date as October 14, 2010. However, the file system timestamp for each file identifies two sets of dates for these files. The first group is dated February 8, 2010 and the second set is dated January 8, 2010. This is because the files came from an emailed file archive (see Finding 6). Unpacking the archives on the system that created the Home archive preserves the file system times (January and February) without modifying the

actual download time (October).

53. None of the files in the Home directory appear to be traceable to the system that created the Home archive. Had any of these files been created on the Home computer, there would not be a `com.apple.quarantine` extended attribute and there would likely be a different extended attribute that identifies the application that created the file. (As a counter example, none of the files in the ALO archive contain `com.apple.quarantine` extended attributes, so none of the ALO files came directly from an email attachment. Also, some files in ALO contain the application creation metadata information. However, the Home archive does not have creation information and has extended attributes showing that the files came from email attachments.)

54. None of these files can be identified as coming from the Home computer, and none were created on the computer that packed the ZIP file. At best, these files can be traced to attachments from two separate – but unidentified – emails that were saved to the local file system on October 14th, and four files that came from unknown sources.

55. The date and time of October 14, 2010 5:55 pm is significant. This time is about two hours before BSI's Attorney Stephen Ring sent the ZIP archive to WAUSA Attorneys McManus, Burlacu, and Saunders; the production emails were sent on October 14, 2010 between 8:09 pm and 8:16 pm EDT.

56. The only conclusion is that (1) the files came from email attachments, and (2) the files were placed in the Home archive on October 14, 2010, shortly before being sent to WAUSA's legal counsel. This is not the original out-the-door data.

57. The metadata clearly shows that none of the Home files originally came from the Home system, and at least 34 of 38 PDF documents in the Home archive were placed on the system no more than a few hours before BSI sent the files to WAUSA's legal counsel on October 14, 2010

at 8:09 pm EDT. These files were planted on the Home system prior to production to WAUSA's legal counsel.

Finding 5: Files in the Work archive were created on an unidentified system

58. In Finding 4, I showed that files in the Home archive did not come from an identified home system. Similarly, the files found in the Work archive were not originally from the system that created the archive. As with the files in the Home archive, the metadata identifies the source for these Work files. Specifically, 23 PDF files came from an email attachment and were saved on February 9, 2010, and 18 PDF files came from an email sent by Attorney Stephen Ring.

59. The `__MACOSX` metadata identifies two emails that contained these files as attachments. This is an issue because one set of email attachments were saved to the system *after* the files were sent to third-party subpoena recipients, *after* the February 8, 2010 production, and *after* they were supposed to have been used on the work/office system(s). These files are not from the work/office system(s).

60. The attachments from the first set of emails all have the same `com.apple.quarantine` value: `q/0000;4b7195fa;Mail;86EF574C-679C-4F30-A169-55726141337C|com.apple.mail`. The encoded hexadecimal timestamp (4b7195fa) decodes as February 9, 2010 at 12:06:02 pm EST – over a month after the first set of subpoenas had been mailed, and nearly a day after the February 8, 2010 production:

Account.Now.pdf	Discover.FS.CTI.pdf
AOL.pdf	Discover.FS.Owner.pdf
Blockbuster.pdf	Dish.Network.pdf
BMG.pdf	Experian.pdf
Body.Sculpture.pdf	Intersections.pdf
Citibank.MC.pdf	Kraft.Global.Tassimo.Direct.pdf
Columbia.House.CTC.pdf	Kraft.pdf
Columbia.House.PA.pdf	Match.com.pdf
Direct.Brands.pdf	Netflix.pdf
Direct.TV.pdf	Rhapsody.pdf

Star.Club.Rewards.pdf
Style.My.House.pdf

Vonage.pdf

61. There are no skips in the Apple metadata inode information, so there is no indication of file replacement or deletion. Since all of these Work files have the same SHA1 checksum as files with the same corresponding names in the Home archive and they both came from email sources, it is reasonable to assume that they came from the same originating email. However, unlike the Home archive, each of these Work files has __MACOSX metadata, so all files appear to have been handled the same way.

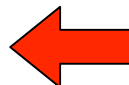
62. The second set of files in the Work archive came from a different email:

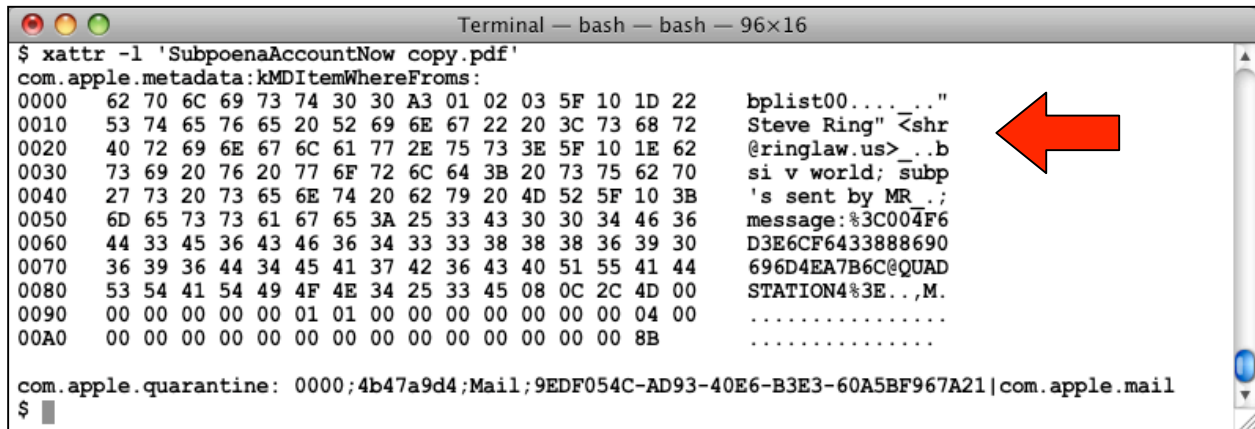
SubpoenaAccountNow copy.pdf
SubpoenaAOL copy.pdf
SubpoenaBlockbuster copy.pdf
SubpoenaBMGMusic copy.pdf
Subpoenabodysculpture copy.pdf
SubpoenaCitibankMC copy.pdf
SubpoenaColumbiaHouse2 copy.pdf
SubpoenaColumbiaHouse copy.pdf
SubpoenaDirectBrands copy.pdf

SubpoenaIntersections copy.pdf
SubpoenaKraftFoods copy.pdf
SubpoenaMatch copy.pdf
SubpoenaNetflix copy.pdf
SubpoenaRhapsody copy.pdf
SubpoenaStarClubRewards copy.pdf
SubpoenaStyleMyHouse copy.pdf
Subpoenatassimodirect.com copy.pdf
SubpoenaVonage copy.pdf

63. This second set of files contains com.apple.quarantine records that indicate downloading from an email on January 8, 2010 at 4:55:32 pm EST. However, this second set of files includes additional Apple metadata information about the source email. Each of these files have com.apple.metadata:kMDItemWhereFroms extended attributes. This metadata identifies the source email's sender ('From' field), subject, and unique Message-ID. However, the date is not provided. All of these attachments are identified as coming from an email with the following attributes:

From: "Steve Ring" <shr@ringlaw.us>
Subject: bsi v world; subp's sent by MR
Message-ID: <004F6D3E6CF6433888690696D4EA7B6C@QUADSTATION4>





```

Terminal — bash — bash — 96x16
$ xattr -l 'SubpoenaAccountNow copy.pdf'
com.apple.metadata:kMDItemWhereFroms:
0000  62 70 6C 69 73 74 30 30 A3 01 02 03 5F 10 1D 22  bplist00....."
0010  53 74 65 76 65 20 52 69 6E 67 22 20 3C 73 68 72  Steve Ring" <shr
0020  40 72 69 6E 67 6C 61 77 2E 75 73 3E 5F 10 1E 62  @ringlaw.us>...b
0030  73 69 20 76 20 77 6F 72 6C 64 3B 20 73 75 62 70  si v world; subp
0040  27 73 20 73 65 6E 74 20 62 79 20 4D 52 5F 10 3B  's sent by MR.;
0050  6D 65 73 73 61 67 65 3A 25 33 43 30 30 34 46 36  message:%3C004F6
0060  44 33 45 36 43 46 36 34 33 33 38 38 38 36 39 30  D3E6CF6433888690
0070  36 39 36 44 34 45 41 37 42 36 43 40 51 55 41 44  696D4EA7B6C@QUAD
0080  53 54 41 54 49 4F 4E 34 25 33 45 08 0C 2C 4D 00  STATION4%3E...M.
0090  00 00 00 00 00 01 01 00 00 00 00 00 00 00 04 00  .....
00A0  00 00 00 00 00 00 00 00 00 00 00 00 00 00 8B  .....

com.apple.quarantine: 0000;4b47a9d4;Mail;9EDF054C-AD93-40E6-B3E3-60A5BF967A21|com.apple.mail
$

```

The output from the command-line 'xattr -l' command on the "SubpoenaAccountNow copy.pdf" file lists the Apple metadata extended attributes and their raw, undecoded values.

64. The issue with this second set of documents is that they are not from where they claim. Specifically, the assumption is that the Work directory denotes Michael Rothman's work computer. However, the metadata clearly indicates an email sent by "Steve Ring". None of the produced files in the Home, Work, ALO, and Responses archives can be traced to an office system used by Michael Rothman.

65. Although the email's subject appears to claim that "MR" (assumed to be Michael Rothman) sent the subpoenas, the email itself came from Attorney Stephen Ring. This is known because (1) Stephen Ring uses the email address found in the Apple metadata, and (2) most of the emails sent by Stephen Ring contain a Message-ID with "@QUADSTATION4", as seen in the Apple metadata. For example, an email sent on Tuesday, March 23, 2010 at 2:51 pm from "Steve Ring" to Attorneys McManus, Saunders, Burlacu, and Horky identifies Ring's computer as "QUADSTATION4":

Received: from [69.243.100.49] (account shr@ringlaw.us HELO
QUADSTATION4)
by mail.linkcenter.net (CommuniGate Pro SMTP 5.2.8)
with ESMTPA id 127424303; Tue, 23 Mar 2010 14:51:37 -0400
Message-ID: <5DBEDFFB397D4B8096BE326ED7141768@QUADSTATION4>
Reply-To: "Steve Ring" <shr@ringlaw.us>
From: "Steve Ring" <shr@ringlaw.us>
To: <McManusJ@GTLAW.com>
Cc: <saunderss@gtlaw.com>,
<burlacun@gtlaw.com>,
<HorkyK@GTLAW.com>
Subject: Re: Beyond Systems, Inc. v. World Avenue USA, LLC
Date: Tue, 23 Mar 2010 14:51:34 -0400
Organization: SHR, P.C.

66. At best, these files were sent by Stephen Ring and may be copies of copies of the original files. **However, the original files were not supplied and the source system was not identified.**

67. The Court ruling on September 23, 2010 required BSI to produce all copies of documents sent between home and office systems. While the metadata identifies some of these files as coming *from* Stephen Ring's office computer and sent to at least one unidentified recipient, no documents have been produced that show the copies sent *to* Stephen Ring, and none appear to have been produced *from* Michael Rothman.

Finding 6: BSI did not provide copies of the archives that were used to create the Home and Work archives

68. The Court ruling on September 23, 2010 required BSI to produce all copies of documents sent between home and office systems. However, there were archives containing copies of subpoenas that were emailed between systems and these full archives were not provided. In effect, BSI created new copies for some documents extracted from the archives, but failed to produce the archives, which contain original copies. Evidence of the existence of these archives is found in file timestamps and Apple metadata from the Home and Work archives.

69. To understand the evidence that shows the existence of unsupplied archives, one must first understand how the time stamps on files from email attachments are generated.

70. There are three sets of computer-generated timestamps in the produced ZIP archives:

1. **Meta date.** File formats like PDF and Word store creation and modification timestamps as part of the file format.
2. **System date.** The timestamp for the file on the file system that created the ZIP archive is stored in the ZIP archive.
3. **Download date.** The `com.apple.quarantine` extended attribute (when present) stores the timestamp that indicates when the file was placed on the system.

71. In general, the meta date must come before the system date since it must be added to the file format before the file is written to the system.

72. If the file was placed directly on a computer system, then the download date should match the system date. The 18 Work files associated with the email from Stephen Ring (all in the format “Subpoena[*name*] copy.pdf”) match this criteria. For example, “SubpoenaAccountNow copy.pdf” has a download date of January 8, 2010 at 4:55:32 pm EST and a system date of January 8, 2010 at 4:55:32 pm EST. The meta date is January 8, 2010 at 1:41:34 pm EST – before it was placed on the system. Thus, the file was copied directly to the Work system approximately three hours after it was created. The original source for this file is unidentified.

73. However, other files were not placed directly on the system. For example, `Account.Now.pdf` in the Work archive says it was downloaded/quarantined on February 9, 2010 at 12:06:02 pm EST. However, the metadata says that it was last modified on 2010-02-08 19:07:17-05:00 (February 8, 2010 at 7:07:17 pm EST) and it has a system date of 2010-02-09 00:07:17 UTC (7:07:17 pm EST). This places the download date *after* the system date, suggesting that it was written to the system a day before it was downloaded onto the system.

74. In general, a file should not have a system time that is before the file was placed on the

system (the download date). However, I know three ways for the download date to be *after* the system date: (1) someone intentionally altered the file's system date, (2) someone intentionally altered the download date, or (3) the file was extracted from another archive that had been downloaded. I believe that this example file is from the third option.

75. When a ZIP archive is unpacked by the Macintosh desktop, the extended attributes from the archive are copied to all of the extracted files. However, the timestamp from the ZIP archive (which is dated before the download date) is applied to the extracted files. In this case, it appears that there was a file archive (circa February 9, 2010) in an email attachment that was saved to the computer and then the files were extracted. Most of the extracted files were then placed in a new ZIP archive (the Work archive) and delivered to WAUSA's legal counsel.¹²

76. The 23 PDFs from the first email attachment all appear to have been extracted from an archive that was sent as an email attachment on February 8th or 9th. The Court ruling on September 23, 2010 (Exhibit 2, page 96, lines 12-18) required "Every one that went out of the office." However, copies of the email's original ZIP file attachments have not been provided.

77. There are at least four sets of emailed archives that were not provided:

- An archive containing at least 23 PDF files was used to extract all files in the Home archive that have a system date of February 8, 2010. This email attachment was saved to the system on October 14, 2010.
- An archive containing at least 18 PDF files was used to extract all files in the Home archive that have a system date of January 8, 2010. This email attachment was saved to the system on October 14, 2010.

¹² As identified in Findings 2 and 3, not all of the files were extracted and then immediately placed into an archive for production. Some files were removed, replaced, updated, or modified prior to being placed in the production archive.

- An archive containing at least 23 PDF files was used to extract all files in the Work archive that have a system date of February 8, 2010. This email attachment was saved to the system on February 9, 2010.
- An archive containing at least 18 PDF files was used to extract all files in the Work archive that have a system date of January 8, 2010. This email attachment was saved to the system on January 8, 2010 from an email sent by Stephen Ring.

78. The Court's order on September 23, 2010 required copies of all files related to the subpoenas that were passed between home and office locations. However, BSI has not produced the original archives that contained these PDF subpoena files, even though the archives were passed between locations. BSI or BSI's legal counsel (1) received archives as email attachments, (2) saved the attachments to various, unidentified systems, (3) unpacked the archives, (4) deleted, replaced, and/or otherwise handled specific files separately, and then (5) created new ZIP archives for WAUSA. BSI did not provide copies of the original files from specific systems. Instead, BSI manufactured new copies of copies from undisclosed sources for production.

Finding 7: Files in the ALO archive came from unidentified sources

79. Some of the ALO files (assumed to be from the system of Amanda L. Ornitz) were not created on this system and came from unspecified sources. Specifically, there are 24 PDFs in the "23 subpoenas" directory that came from unidentified sources. This was determined by analyzing the provided Apple metadata.

80. Unlike the Work and Home files, none of the Apple metadata files in the ALO archive contain `com.apple.metadata:kMDItemWhereFroms` or `com.apple.quarantine` extended attributes; these files were not obviously downloaded from an email attachment. In addition, for most of the files, the Apple metadata identifies the applications that created the files (the

`com.apple.FinderInfo` fields in the Apple metadata). Specifically, the Word documents are identified as being created by Microsoft Word and most of the PDFs were created using either Adobe Acrobat or Adobe Reader.¹³

81. However, some of the ALO files were not created on this system. For example, one file does not have a file creator specified in the metadata: “23 Subpoenas/Discover Financial Services/SubpoenaDiscoverFinancialServices.pdf”. This file appears to have been created somewhere else and was copied onto the system.

82. Other files in the ALO archive lack metadata that indicates the local application that created the file. Specifically, there are 23 PDFs in the “23 Subpoenas” directory with a signature dated “1/8/2010” that lack metadata. Since each contains a scanned two-page document (the subpoena signature page), it is possible that the scanning software did not add any Apple metadata.

83. I conclude that at least one file, and potentially 24 files, in the ALO archive came from unidentified sources. Although the computer denoted by the ALO archive has not been identified, most of the files in the ALO archive do appear to have come from an original system and none are clearly identifiable as coming from email attachments.

Finding 8: The ALO, Home, and Work archives contain backdated documents

84. There is a timestamps issue indicating that the signed subpoenas are not what they claim to be. Specifically, the timestamps in the PDF metadata and in the ZIP file for the signed PDF files indicate that they were scanned on or after February 3, 2010. However, the signature is

¹³ The `__MACOSX` metadata contains a four-letter code to denote the creator application. Microsoft Word uses “MSWD”. Adobe Acrobat and Acrobat Reader both use the “CARO”. If the file was downloaded from the Internet, saved directly from an email attachment, or created by an application that does not support Apple metadata, then the four-letter creator code is left blank. All of the files in the Home and Work archives have blank creator codes.

dated January 8, 2010, while the original documents were apparently issued on January 7 and 8, 2010.

85. The original documents could not have been scanned a month after they were mailed since the attorneys no longer had the original documents. These documents appear to have been backdated since they were signed after the signature date and do not represent the mailed documents.

Any organization not a party to this suit that is subpoenaed for the taking of a deposition shall designate one or more officers, directors, or managing agents, or other persons who consent to testify on its behalf, and may set forth, for each person designated, the matters on which the person will testify. Federal Rules of Civil Procedure, 30(b)(6).	
ISSUING OFFICER'S SIGNATURE AND TITLE (INDICATE IF ATTORNEY FOR PLAINTIFF OR DEFENDANT)	DATE
<i>Michael S. Rothman (Attorney for Plaintiff)</i>	1/8/2010
ISSUING OFFICER'S NAME, ADDRESS AND PHONE NUMBER Michael S. Rothman 401 East Jefferson St. Suite 201 Rockville MD 20850 (301)251-9660	
<i>Signature line from AccountNowSubpoena.pdf claiming to be signed "1/8/2010".</i>	
ExifTool Version Number	: 8.23
File Name	: AccountNowSubpoena.pdf
Directory	: 23 Subpoenas
File Size	: 320 kB
File Modification Date/Time	: 2010:02:03 12:19:38-05:00
File Permissions	: rwxrwxrwx
File Type	: PDF
MIME Type	: application/pdf
PDF Version	: 1.3
Page Count	: 2
Creator	: ScanSnap Manager
Producer	: Mac OS X 10.5.8 Quartz PDFContext
Create Date	: 2010:02:03 17:19:38Z
Modify Date	: 2010:02:03 17:19:38Z
<i>Metadata from AccountNowSubpoena.pdf, as extracted using ExifTool version 8.23, shows that the PDF was created on February 3, 2010 (2010:02:03).</i>	

☒ YOU ARE COMMANDED to produce and permit inspection and copying of the following documents or objects at the place, date, and time specified below (list documents or objects):
See Attachment A.

PLACE Michael S. Rothman, Esq. 401 East Jefferson St. Suite 201 Rockville MD 20850 (301) 251-9660	DATE AND TIME 2/19/2010
--	----------------------------

☒ YOU ARE COMMANDED to permit inspection of the following premises at the date and time specified below.

PREMISES	DATE AND TIME
----------	---------------

Any organization not a party to this suit that is subpoenaed for the taking of a deposition shall designate one or more officers, directors, or managing agents, or other persons who consent to testify on its behalf, and may set forth, for each person designated, the matters on which the person will testify. Federal Rules of Civil Procedure, 30(b)(6).

ISSUING OFFICER'S SIGNATURE AND TITLE (INDICATE IF ATTORNEY FOR PLAINTIFF OR DEFENDANT)	DATE
---	------

Michael S. Rothman, attorney for Plaintiffs

1/7/10

ISSUING OFFICER'S NAME, ADDRESS AND PHONE NUMBER

Michael S. Rothman, Esq. 401 East Jefferson St. Suite 201 Rockville MD 20850 (301) 251-9660

Checkmarks, signature, and hand-written date from Document 323-29, addressed to Netflix. BSI has not produced any copies of the document that was sent to Netflix. Netflix returned this document to WAUSA.

☒ YOU ARE COMMANDED to produce and permit inspection and copying of the following documents or objects at the place, date, and time specified below (list documents or objects):
See Attachment A.

PLACE Michael S. Rothman, Esq. 401 East Jefferson St. Suite 201 Rockville MD 20850 (301) 251-9660	DATE AND TIME 2/19/2010
--	----------------------------

☒ YOU ARE COMMANDED to permit inspection of the following premises at the date and time specified below.

PREMISES	DATE AND TIME
----------	---------------

Any organization not a party to this suit that is subpoenaed for the taking of a deposition shall designate one or more officers, directors, or managing agents, or other persons who consent to testify on its behalf, and may set forth, for each person designated, the matters on which the person will testify. Federal Rules of Civil Procedure, 30(b)(6).

ISSUING OFFICER'S SIGNATURE AND TITLE (INDICATE IF ATTORNEY FOR PLAINTIFF OR DEFENDANT)	DATE
---	------

Michael S. Rothman (Attorney for Plaintiff)

1/8/2010

ISSUING OFFICER'S NAME, ADDRESS AND PHONE NUMBER

Michael S. Rothman, Esq. 401 East Jefferson St. Suite 201 Rockville MD 20850 (301) 251-9660

Checkmarks, signature, and date from NetflixSubpoena.pdf are different from the document returned by Netflix. This document, produced by BSI, was not identified in the Michael Rothman's affidavit (his paragraph 10 and Exhibit A) as one of the re-signed versions. According to the PDF metadata, this document was created on February 3, 2010 at 11:57:33 am EST.

86. The 69 PDFs with backdated signatures are as follows:

Files from Home archive Last modified Feb. 8, 2010	Files from Work archive Last modified Feb. 8, 2010	Files from ALO archive Last modified Feb. 3, 2010
Account.Now.pdf	Account.Now.pdf	AccountNowSubpoena.pdf
AOL.pdf	AOL.pdf	AOLSubpoena.pdf
Blockbuster.pdf	Blockbuster.pdf	BlockbusterOnlineDVDSubpoena.pdf
BMG.pdf	BMG.pdf	BMGMusicSubpoena.pdf
Body.Sculpture.pdf	Body.Sculpture.pdf	BodySculptureSubpoena.pdf
Citibank.MC.pdf	Citibank.MC.pdf	CitibankMCSUBPOENA.pdf
Columbia.House.CTC.pdf	Columbia.House.CTC.pdf	ColumbiaHouseSubpoenaCTC.pdf
Columbia.House.PA.pdf	Columbia.House.PA.pdf	ColumbiaHouseSubpoenaPA.pdf
Direct.Brands.pdf	Direct.Brands.pdf	DFSSubpoenaCTI.pdf
Direct.TV.pdf	Direct.TV.pdf	DFSSubpoenaOwner.pdf
Discover.FS.CTI.pdf	Discover.FS.CTI.pdf	DirectBrandsSubpoena.pdf
Discover.FS.Owner.pdf	Discover.FS.Owner.pdf	DirectTVSubpoena.pdf
Dish.Network.pdf	Dish.Network.pdf	DishNetworkSubpoena.pdf
Experian.pdf	Experian.pdf	ExperianSubpoena.pdf
Intersections.pdf	Intersections.pdf	IntersectionsSubpoena.pdf
Kraft.Global.Tassimo.Direct.pdf	Kraft.Global.Tassimo.Direct.pdf	KraftFoodSubpoena.pdf
Kraft.pdf	Kraft.pdf	MatchSubpoena.pdf
Match.com.pdf	Match.com.pdf	NetflixSubpoena.pdf
Netflix.pdf	Netflix.pdf	RhapsodySubpoena.pdf
Rhapsody.pdf	Rhapsody.pdf	StarClubRewardsSubpoena.pdf
Star.Club.Rewards.pdf	Star.Club.Rewards.pdf	StyleMyHouseSubpoena.pdf
Style.My.House.pdf	Style.My.House.pdf	TassimodirectSubpoena.pdf
Vonage.pdf	Vonage.pdf	VonageSubpoena.pdf

87. I conclude that these are not the original files that were sent to third-party subpoena recipients because the signatures were backdated and the scans were created after the third-party subpoenas were sent. The Court's order from September 23, 2010 required all copies of the subpoena documents that left the home and office locations. However, BSI did not provide copies of the original subpoenas with Version 2 of Attachment A that were sent to the third-party recipients.

Finding 9: BSI has not produced all copies of the signature forms and signed documents

88. The ALO "23 subpoenas" subdirectory contains multiple files that appear to be unrelated. The source documents for these files were not provided. Specifically, there are templates for a signature that do not match the signature sheets, and there are no complete sets of

two-page signature sheets with the version of Attachment A that was sent to the third-party subpoena recipients.

89. For example, there are three AOL files in ALO's "23 subpoenas" directory:



- "AOL/Schedule.A.Sponsors.Subpoena.MR.Final copy 2" has a system date of January 4, 2010. This is a Microsoft Word file containing Version 3 of Attachment A.
- "AOL/SubpoenaAOL.pdf" was created on February 3, 2010 at 10:10:48 am EST and contains the unprinted issuance and Version 1 of Attachment A. The Word document that was used to create the attachment has not been produced.
- "AOLSubpoena.pdf" was created on February 3, 2010 at 12:21:59 pm EST and contains a scan of the printed issuance but not the attachment.

90. The three AOL files contain three different sets of content, and each set is incomplete.

Without a complete set, the files cannot be linked to each other.

91. As another example of clearly unrelated documents, there are five Columbia House documents in the "23 subpoenas" subdirectory: one Word document (Attachment A Version 3), two unprinted PDFs with attachments (Attachment A Version 1), and two scanned documents (no attachments). These are clearly not from the same sources.

92. Specifically, the scanned signature document ColumbiaHouseSubpoenaPA.pdf has the same recipient address as the unprinted SubpoenaColumbiahouse.pdf document. However, the "Place" box in the unprinted PDF form shows a Florida address and is aligned on the top line. In contrast, the printed and signed document shows a different addresses and the address is located inside the box.

<p>See Attachment A. </p> <p>PLACE <u>Cohen & Owens, P.A., 3801 Hollywood Blvd., Ste. 200, Hollywood, FL 33021</u></p> <hr/> <p><input checked="" type="checkbox"/> YOU ARE COMMANDED to permit inspection of the following premises a</p> <hr/> <p><i>The Place entry field from the unprinted ColumbiaHouseSubpoenaPA.pdf document shows a Florida address on the upper line.</i></p>	<p>See Attachment A. </p> <p>PLACE <u>Michael S. Rothman, Esq. 401 East Jefferson St. Suite 201 Rockville MD 20851-251-9660</u></p> <hr/> <p><input checked="" type="checkbox"/> YOU ARE COMMANDED to permit inspection of the following premises a</p> <hr/> <p><i>The Place entry field from the scanned SubpoenaColumbiahouse.pdf document shows Michael Rothman's address in the box.</i></p>
--	---

93. The only conclusion is that the unprinted ColumbiaHouseSubpoenaPA.pdf document was not used to create the printed/signed version (SubpoenaColumbiahouse.pdf). The source for the printed/signed version has not been produced. Similarly, the unsigned SubpoenaKraftFoods.pdf has different text alignment and checkbox selections compared to the signed KraftFoodSubpoena.pdf; there is no indication that the unsigned document was the source for the signed document.

94. Each of the 23 subpoenas in the ALO archive has similar issues. The Attachment A found in the Word document (Version 3) is different from the attachment in the unprinted document (Version 1). In addition, there is no link between the unprinted documents containing Version 1 of Attachment A and the printed/signed PDF documents that lack attachments.

95. The Court's order on September 23, 2010 required all copies of the documents that left the home and office locations. The ALO archive appears to contain some documents, but not the complete set for any of the 23 subpoenas.

Finding 10: BSI did not produce files sent between the home and work computer as attested in Michael Rothman's affidavit

96. There are multiple files that are explicitly missing from the provided documents. The missing documents are reported by Michael Rothman to have been used on both his work and home computers. In addition, there are original documents that were transmitted to the ALO computer that are missing.

97. In his July 30, 2010 affidavit (Document 375-3), Michael S. Rothman explicitly states that files were transferred between his home and office systems. He wrote in his paragraph 17 (his bold, italics, and underlines):

Between February 5th and 7th, the Washington Metropolitan area received ***nearly twenty (20) inches of snow***, closing most area facilities. During the blizzard, I worked from my home computer much of the time. My email records also indicate that I sent multiple copies of the subpoenas, including the Attachment A's, between both my home and office computer during that time.

98. There are multiple inconsistencies with his statement and the subpoena productions:

- (1) The only copy of the Attachment A found in an editable, Microsoft Word format appears in the ALO archive. This file contains Version 3 of Attachment A and was duplicated 23 times under 23 separate names. The associated metadata shows that the file was last modified a month before the snow, on January 4, 2010 and the save appears to have occurred on whatever computer is represented by the ALO archive. Although Mr. Rothman states that he emailed multiple copies of the subpoenas between February 5th and 7th, **no copies of additional Attachment A documents in Microsoft Word format that were worked on between February 5th and 7th have been produced.**
- (2) Although there are PDF documents with metadata dated February 8, 2010 in both the Home and Work archives, there are no files with dates showing February 5-7, 2010. Rothman stated that he transferred files between his office and home before February 8th, but none of those files have been provided.
- (3) The files with the metadata date of February 8th have Apple metadata with extended attributes in the Home archive showing that the documents were saved on October 14, 2010 from an email. The same files appear in the Work archive and with extended

attributes stating that Stephen Ring sent the email. Thus, these documents do not represent files sent by Rothman between his office and home systems in February; these are files that were sent by Stephen Ring.

(4) There are no copies of documents sent from Michael Rothman to Stephen Ring. In the Work archive are 18 unsigned PDFs with subpoena forms that are filled out for Michael Rothman, and include a copy of Attachment A Version 1 that corresponds with the Microsoft Word documents found in the ALO system. The Work archive's Apple metadata shows that the email came *from* Stephen Ring. However, there are no copies of the documents that were initially sent *to* Stephen Ring.

99. Michael Rothman's own declaration supports the findings in this report that (1) there are additional copies of Attachment A and the subpoenas that were sent between his home and office systems, and (2) these additional copies have not been produced. Files required by the Court's September 23, 2010 order were not provided.

Finding 11: PDF and Word documents are missing for documents sent to third-party subpoena recipients

100. The Court's order required *all* subpoenas that went out of the office or between locations; not all ESI (electronically stored information). The Responses archive contains scans of responses for subpoenas (ESI) that appear to have been mailed on 9-Aug-2010. BSI provided none of the original PDF or Word documents for these subpoenas. The metadata indicates that the files in the Responses archive were scanned on one unidentified system, and emailed to another unidentified system. However, BSI has not produced the subpoenas referenced by the scanned Responses from third-party subpoena recipients.

101. The Apple metadata in the Responses archive identifies *where* the files came from, while the PDF metadata in the same archives identifies *how* and *when* the PDF documents were

created.

102. According to the Apple metadata, nearly all of the Responses files came from email attachments. Each of the emails had different Subject lines (e.g., “subpoena responses”, “Computer Spirit”, “Dish Network Objections”) and different Message-ID strings. However, each email identifies the same sender (“Amanda Email”) and same computer system in the Message-ID (@mikerothman.com). For example, `computerspiritassemblysheet.pdf` in the Responses archive came from an email with the following attributes:

```
From: Amanda Email <amanda@mikerothman.com>  
Subject: Computer Spirit  
Message-ID: <7F386C35-B0DE-4769-B5A9-F92E05EDB9FF@mikerothman.com>
```

103. Six (6) of the ten (10) PDF documents in the Responses archive came from emails sent by “Amanda Email” (assumed to be Amanda L. Ornitz, an assistant to Attorney Michael Rothman). The PDF metadata in each of these files identifies the scanning program “ScanSnap Manager” for Mac OS X 10.5.8.

104. Only one file in the Responses archive appears to have come from the computer that created the archive: `Direct.Brand.Ltr.081810 copy.pdf`. This file has (1) a populated file creator field in the Apple metadata, indicating that it was created by Adobe Acrobat or Adobe Reader, (2) no `com.apple.quarantine` metadata, indication that it did not come from an email attachment, and (3) PDF metadata indicating that it was created on a Xerox WorkCentre Pro 90 photocopier/scanner.

105. The `Direct.Brand.Ltr.081810 copy.pdf` third-party response includes a subpoena with Attachment A Version 2 that was sent by Michael Rothman. However, BSI has not produced a copy of the subpoena that was sent *to* the recipient; this response only includes a copy of what came *from* the recipient. Moreover, the signed subpoena found in the ALO archive

has a different signature from the returned document in the Responses archive, and a different version of Attachment A from the SubpoenaDirectBrands.pdf found in both the Home and Word archives.

The image shows two side-by-side screenshots of legal documents. The left document is titled "Direct.Brand.Ltr.081810 copy.pdf" and the right document is titled "DirectBrandsSubpoena.pdf". Both documents are subpoenas for Michael S. Rothman, Esq., dated 1/8/2010. The documents contain checkboxes for testimony, deposition, and inspection of documents and premises. Red arrows point to differences in the signature and the text "Plaintiffs" vs "Plaintiff".

The subpoena signature page from Direct.Brand.Ltr.081810 copy.pdf in the Responses archive (left) and "23 Subpoenas/DirectBrandsSubpoena.pdf" from the ALO archive (right) show different forms and different signatures. For example, the right has a period after the middle initial, while the left does not. The left says "Plaintiffs" (plural) but the right says "Plaintiff" (singular). The red arrows identify some of the differences between the documents.

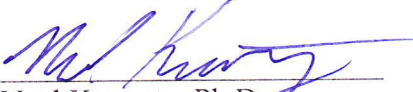
106. I conclude that BSI has (1) not provided complete copies of the sent subpoenas, (2) not identified the source systems for each document, and (3) produced documents that are unrelated to the Court order.

Conclusion

This declaration is based on my analysis of the provided information.

I hereby declare under penalty of perjury of the laws of the United States of America that the foregoing is true and correct.

Dated: November 23, 2010



Neal Krawetz, Ph.D.
Hacker Factor Solutions
P.O. Box 270033
Fort Collins, CO 80527-0033